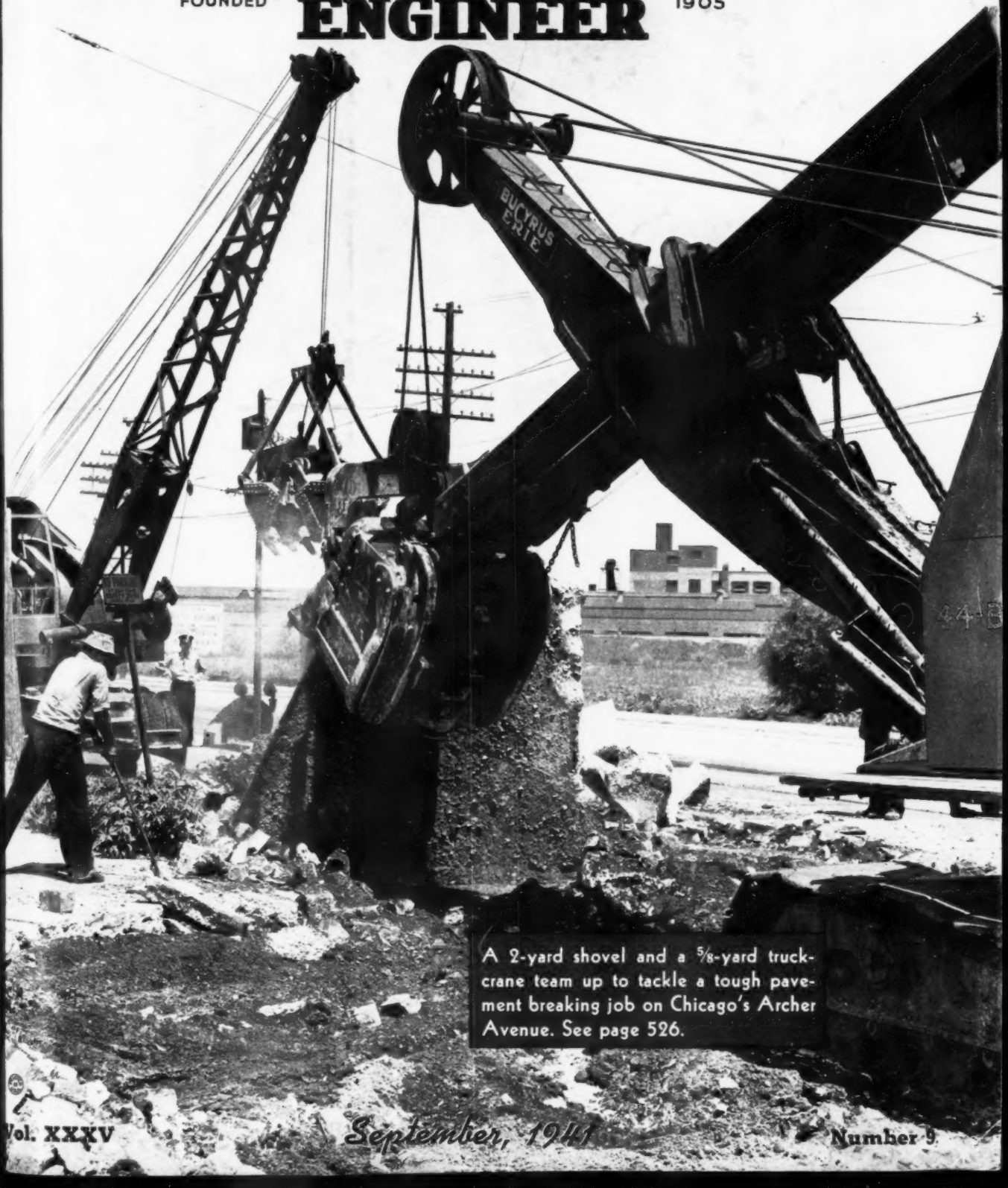
Engin. Library

EXCAVATING ENGINEER

FOUNDED 1905



A 2-yard shovel and a 5/8-yard truck-crane team up to tackle a tough pavement breaking job on Chicago's Archer Avenue. See page 526.

Vol. XXXV September, 1941 Number 9

What size blast holes do you drill now and at what spacing?

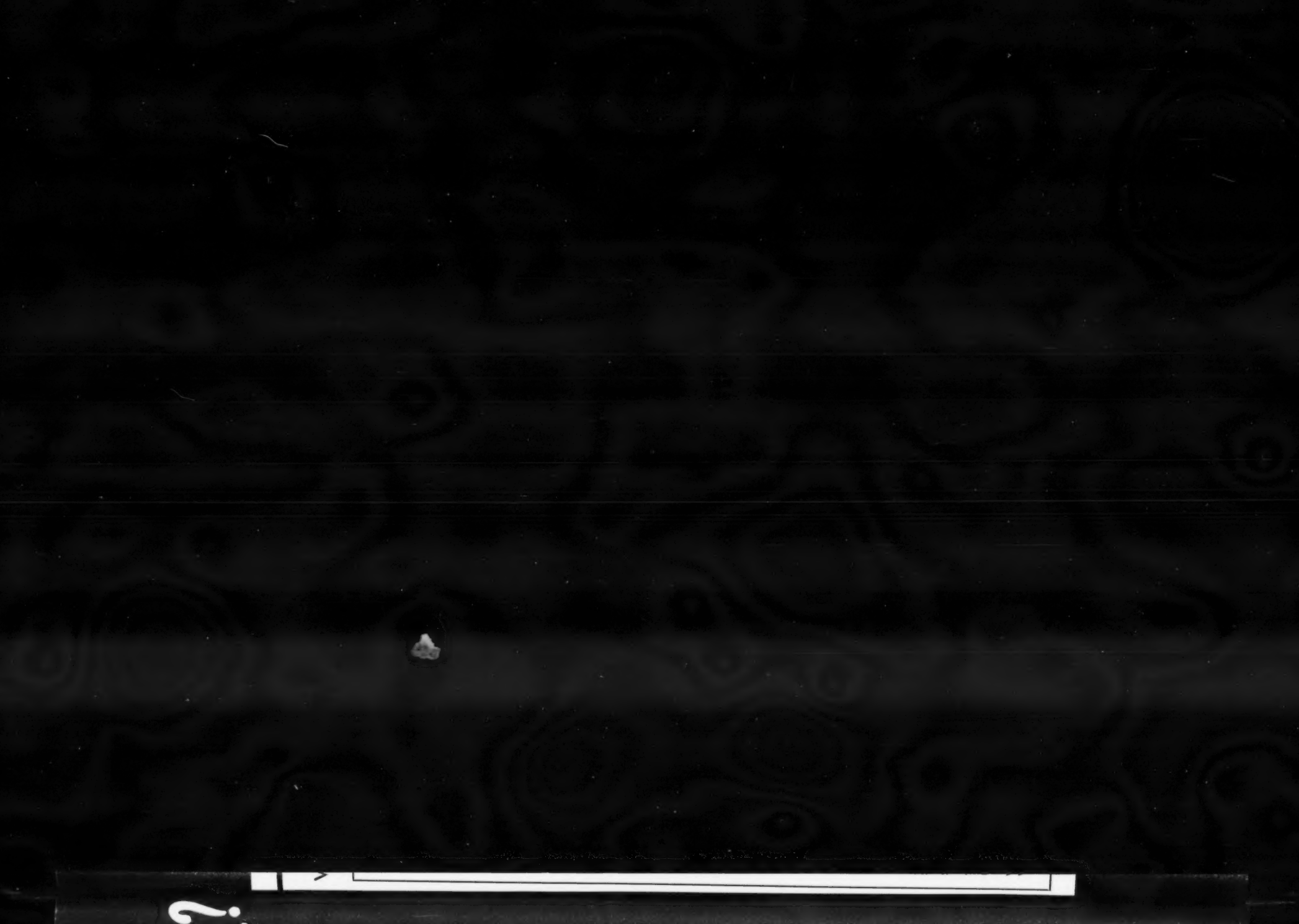
How much could you save per year if you could drill 9" holes even faster than you now drill 6" and could increase your spacing proportionately? Figure it out and then let us show you many other economies made with the modern Bucyrus-Erie 29-T.

BUCYRUS ERIE

BUCYRUS-ERIE CO.

SOUTH MILWAUKEE, WISCONSIN, U. S. A.

H 35



EXCAVATING ENGINEER

FOUNDED 1905

contents

Vol. XXXV **September, 1941** No. 9

September Advertisers

Allis-Chalmers Manufacturing Company 533
American Chain & Cable Company .....3rd Cover
American Steel and Wire Company 502
Atlas Imperial Diesel Engine Company 537
Barber-Greene 507
Bethlehem Steel Company 498
Brooks Equipment and Manufacturing Company 542
Buckeye Traction Ditcher Co... 539
Bucyrus-Erie Company ..2nd Cover, 504, 540-541, 544, 546, 547
Bucyrus-Monighan Company .. 527
Caterpillar Tractor Company.. 529
Columbia Steel Company 502
Ensign-Bickford Company, The 552
For Sale (Classified) 550-551
Gatke Corporation 532
Haiss Manufacturing Company, George .....4th Cover
Hayward Company, The 544
Hercules Powder Company 545
Ingersoll-Rand Company 497
International Harvester Co. ... 543
Jones & Laughlin Steel Corporation 544
Koehring Company 535
Leschen & Sons Rope Co., A... 548
Macwhyte Company 523
Northwest Engineering Company 503
Owen Bucket Company 549
Preformed Wire Rope 525
Roebling's Sons Co., John A. .. 506
Rogers Brothers Corporation .. 549
Sauerman Brothers 536
Socony-Vacuum Oil Company, Inc. 500-501
Standard Oil Company of California 531
Templeton, Kenly & Co. 536
United States Steel Corporation Subsidiaries 502
Wellman Engineering Co., The. 534
Westinghouse Electric & Mfg. Company 505

"Doodlebugging Deluxe" — By Charles F. Berry **509**

Dayton Dredging Company brings the world's largest dragline-dredging plant to Nevada's famed Comstock Lode area for some large scale placer mining operations.

Six Month City — By Spencer Jones **512**

John W. Cowper Company, Inc., of Buffalo and Senior & Palmer, Inc., of New York City combine forces to build housing facilities for 15,000 men in six months at the Fourth Armored Division's Pine Camp headquarters.

More Power for St. Louis **516**

A six-page picture story of the methods and equipment used by Fruin-Colnon Contracting Co., Western Construction Co., and Gamble Construction Co., in constructing an addition to Plant No. 2 of the Union Electric Company at Venice, Ill.

Editorial **522**

Buy Quality for Defense .....

Equipment You Ought to Know About **524**

Non-tilting Mixer 524
First Aid Cabinet 524
Pneumatic Roller 524
Arm-type Hoist 524

Shots from the Firing Line **526**

Substitute Defense Highway Bill Proposed 526
Repave Access Highway to Chicago Airport 526
Contract Let for World's Highest Earthfill Dam .. 526
Turnpike Extension Plans.. 528
Monthly Business Indicators 530
Gold a By-Product of Central Valley Project .. 530
Government Appoints Construction Chief 530
Woods Bros. Const. Co. Elect New President ... 532
Prospecting with a Water Well Drill 532
Keswick Dam Contract Awarded 536
Virginia Appoints New Highway Commissioner .. 536

Obituaries **528**

Wallace Brooks
Morris Leon Ellis
John Dolese

Not in the Contract **538**

Notes from the Manufacturers **548**

New Trade Literature **549**

Published Monthly by THE EXCAVATING ENGINEER PUBLISHING COMPANY, South Milwaukee, Wisconsin, U.S.A.

F. O. WYSE, *Manager* — ARNOLD ANDREWS, *Assistant Manager*
D. B. REED, JR., *Editor* — M. J. BARGENQUEST, *Associate Editor*
JOHN I. MORAVEC, *Art Director* — DELMAR COHEN, *Assistant Editor*
E. M. HEUSTON, *Sales Manager* — E. F. BRIESEMEISTER, *Assistant Editor*

CCA Member Controlled Circulation Audit

Regular subscription: 25 cents per copy, $2.50 a year; Canada, subject to publication policy, $3.50 per year. Special subscription: Upon application on card inserted in this number this publication will be sent frequently (not regularly) free of charge, to companies, executives and supervisors engaged actively in the industry of excavation.

COPYRIGHT 1941 BY THE EXCAVATING ENGINEER PUBLISHING COMPANY

NE

Gargoyle D.T

FOR INTERMEDIATE AND

EVERY TECHNICAL FIELD has a leader. And among Diesel oils, Gargoyle D.T.E. Oils are the leader.

Since Gargoyle D.T.E. Oils originally helped Dr. Diesel lubricate his first Diesel engine, operators have used "D.T.E.'s" as the standard for measuring the efficiency of lubrication. Time and again these famous oils have set unique records for reliable operation through long periods of service.

Diesel men have been generous with their praise. But Socony-Vacuum technicians are hard to satisfy. And today, they have made possible a new series of GARGOYLE D.T.E. OILS—"1-to-5"—that is specifically made for intermediate and large Diesels.

These remarkable oils possess all the virtues of the established D.T.E. brand. And they go even further. To a greater extent than ever before, these oils provide four important qualities:

1. **Maximum Freedom from Ring and Piston Deposits under Extreme Loads.**
2. **Great Lubricity to Prevent Scuffing and Wear...Even at Very High Temperatures and Heavy Pressures.**
3. **Maximum Stability...Long Oil Life.**
4. **Complete Freedom from Corrosive Tendencies with Any Type of Bearing Alloy ...Under any Service Condition.**

For your convenience in writing to Socony-Vacuum Oil Co., you will find a card bound in this issue.

THERE is no question about the economy of Bucket Loaders. For twenty years they have loaded material cheaper than any other method or machine.

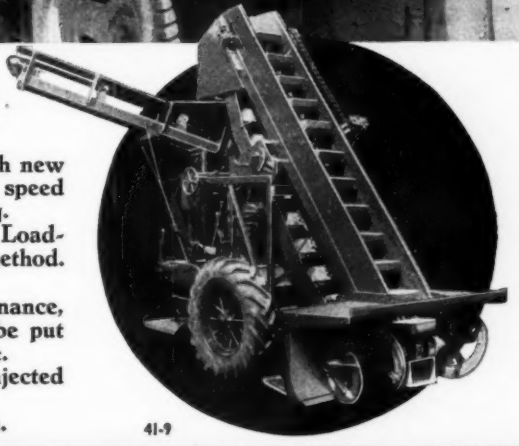
Now the B-G Model 522 offers a new economy through new portability. Not just greater ease in maneuvering—but truck speed towing—with quick and easy hitching—with no dismantling.

This new portability greatly increases the scope that the Loader can cover. It practically obsoletes every other loading method. It makes every other means too expensive.

Simpler systems are now feasible. In highway maintenance, for instance, small roadside stockpiles at the job site can be put down in advance, loaded as needed with the Barber-Greene.

In addition to this new portability, Barber-Greene has injected many other new features into this ingenious design.

Write for complete information. There is no obligation.

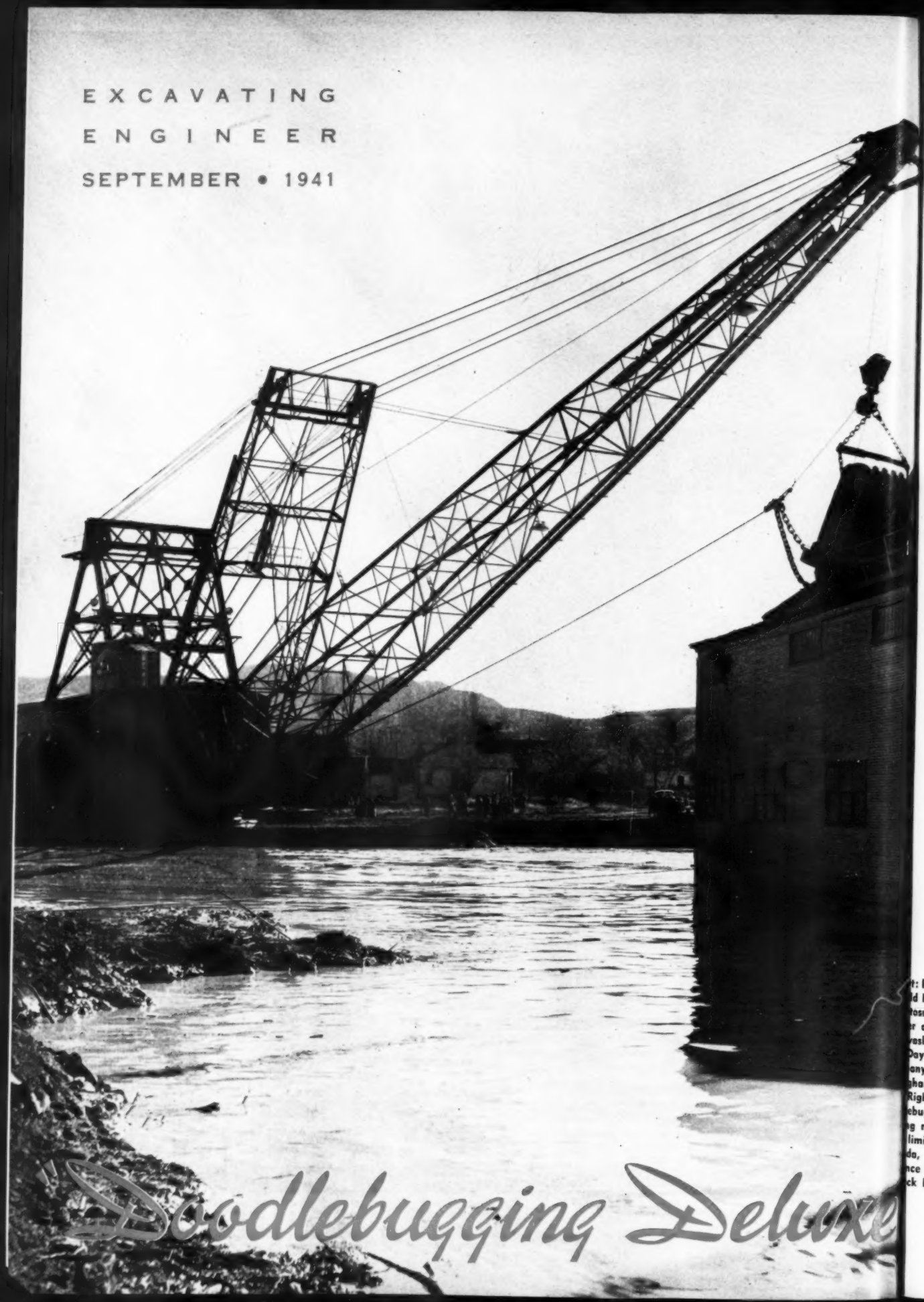


41-9

BARBER GREENE
STANDARDIZED MATERIAL HANDLING MACHINES
AURORA ILLINOIS

For your convenience in writing to Barber-Greene, you will find a card bound in this issue.

EXCAVATING
ENGINEER
SEPTEMBER • 1941



Doodlebugging Deluxe

Dayton Dredging Company brings the world's largest dragline-dredging plant to Nevada's famed Comstock Lode area for some large scale placer mining operations

By CHARLES F. BERRY

MODERN METHODS have come to old Gold Canyon, near Dayton, Nevada. In the same canyon where early placer miners found their first gold the new year brought an 850-ton stripper, in the form of a 15-W Bucyrus-Monighan dragline, to rip up the local landscape and feed it to a 650-ton Bodinson washing plant which separates the precious metal from tons of gravel.

Gold, washed down from the fabulous Comstock Lode which sprang to life in the sixties, lies under a layer of 2½ to 8 feet of clay in a gravel bed varying from a few feet to a depth greater than the 140-foot maximum running depth. Memories of the old stampede days, when the Grosh brothers and others followed the yellow trail up the canyon to the famed Comstock Lode strike, are revived by this streamlined resumption of gold reclaiming operations.

Gone now is the heyday of Comstock. Gone also are the days when a miner with a small pan and a little water could pick a living from the millions of tons of placer gravel that cover the canyon. Yet, through large-scale operations with dragline and dredge, the Dayton Dredging Company expects to recover more pay dirt from the historic diggings as various tests made over the past year have proved the area contains satisfactory values.

Present operations of the Dayton Dredging Company, which started a few days before the beginning of this year, are on the edge of the Dayton township and cover an initial site of 53 acres. Part of the once flourishing town of Dayton, including a church, school and numerous residences, are within the placer area and for months the company has been busy acquiring leases and property rights so that nothing will impede the progress of Dayton's biggest industry. Within the next three years the 15-W is expected to cover the entire lease extending from the rim of the canyon to the state highway and involving some ten to twelve million yards of workable material.

World's Largest Dragline-Dredge Rig

Representing an investment of approximately $650,000, the dragline and dredge outfit constitutes the largest placer recovery plant of the dragline type ever built. Weighing approximately 850 tons in working order the dragline rig was brought in sections from the east by a string of 21 flat cars to Carson City and transported over the highways to the claim by truck. Around 50 men were employed in the erection under George Fenner, Bucyrus-Monighan erection engineer.

Electric current for the equipment is taken from the lines of Nevada-California Power & Light Company at 2,300 volts and transformed to 440 volts for miscellaneous power and 110 volts for lighting by three General Electric transformers. To provide power for the Ward-Leonard controlled 15-W and the machinery of the washing plant, three miles of 60,000 volt transmission line were strung from nearby Silver City.

Swinging a 14-yard bucket at

t: Fourteen yards d bearing gravel ossed into the r of the Bodin- ashing plant by Dayton Dredging any's Bucyrus- han 15-W drag- Right: This giant ebug outfit is g right into the limits of Dayton, da, as it works ce famous Com- ck Lode Area.

• Worked-over gravel is placed on tailing piles by the two-section, 190-foot stacker attached to the Bodinson washing plant.

the end of a 180-foot boom, the walking-type dragline is now mining gravel on this site to a depth of 120 feet. According to recent reports the dragline is working on a bench about 40 feet below the general surface elevation which the machine digs out in advance of its travel. From this bench the 15-W excavates in the pond to a depth of 80 feet beneath itself as well as handling the 40-foot surface cut.

A recent time study of the Bucyrus-Monighan 15-W when it was working under water about 55 feet presents some interesting figures on the operations of this big dragline. Swinging a 14 yard bucket, the machine works the following typical 75 second cycle:

From time bucket hits water to completion of digging stroke	40 sec.
Pay out bucket in water	7 sec.
Hoist from water elevation to hopper	18 sec.
Dump and lower to water level	10 sec.
Total	75 sec.

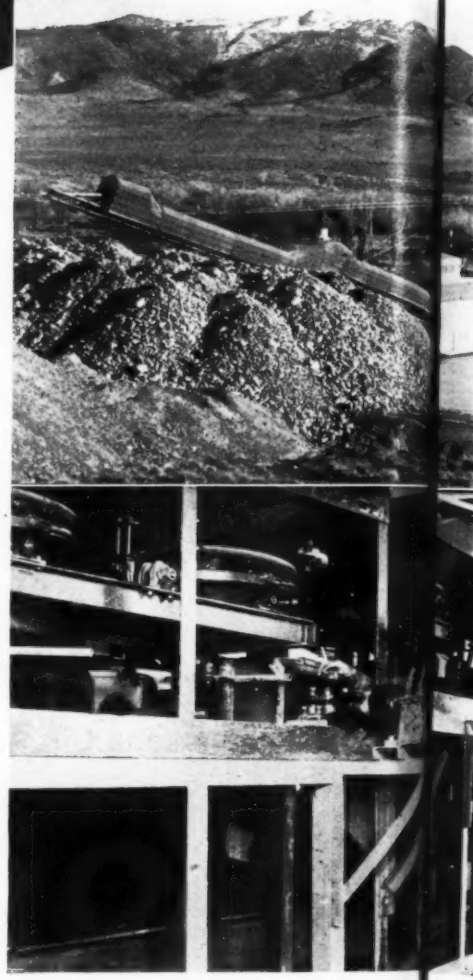
Following the above cycle time, the 15-W handles 10,000 yards of material per 22-hour day.

To float the Bodinson washing plant dredge, the dragline excavated an artificial pond approximately 250 feet square. As the operations move forward the pond is also moved, the dragline cutting the bank ahead and the tailings from the washing plant filling up the rear, thus keeping the pond relatively the same size. For present operations water has been pumped from the nearby Carson River, but as the pond moves away and the stream becomes shallow during the summer, wells will be sunk. Preparations are already being made for drilling a 14-inch well to maintain the present water level.

The all-important Bodinson gold recovery plant is floated near the middle of the pond and held in place by cables anchored on four sides. Winches easily move the 650-ton structure to keep it within reach of the dragline boom. Measuring 106 feet long and 50 feet wide, the boat supports the washing plant, housed in a superstructure built flush with the sides and standing 28 feet above the deck. The boat itself is supported by 13 large pontoons.

Gravel from the dragline bucket is dumped into a hopper at the front end of the recovery plant. Grizzly bars across the mouth of the hopper prevent the entry of oversize rocks and boulders. The smaller material, goldbearing sand and gravel, passes into a trommel. The trommel is 9 feet in diameter, 60 feet long, and is placed on a slight slant. It is driven by a 125-horsepower Westinghouse gear-motor.

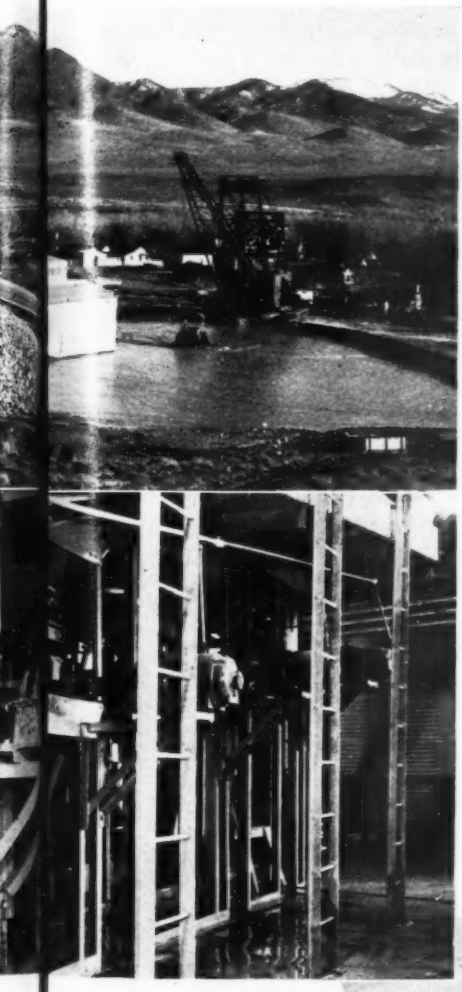
High pressure streams of water are directed onto the sand and gravel passing through the trommel, half of whose 60-feet length is literally a sieve. Through the holes pass gold bearing sand and pieces of rock and gravel one-half inch in diameter or smaller. Larger pieces are carried to the trommel's end, fall onto the conveyor belt of the 190-foot stacker.



• A dredgeman inspects a row of the 32 Pan-American rougher-jigs. Powered by Westinghouse motors, these conical bins shake the sand and gravel causing the heavier, gold-bearing material to settle to the bottom where it is drawn off into a concentrate sump.

which dumps them onto the worked-over gravel pile bordering the pond. The design of this stacker is unique in that it is divided into two sections joined by a hinged connection. W. H. Waters, chief engineer of the Dayton Dredging Company, originated this design to allow a portion of the fill to be made under water in order to get hydraulic fill compactness. The two section arrangement will also enable the outer section to be removed in the event the plant is put to work on another property requiring a lesser digging depth. The first section of the 42-inch wide conveyor is 105 feet in length and the end piece is 85 feet long.

• General view of the Dayton Dredging Company's "diggings" during the early stages of the dragline-dredging operations.



Sand and gravel passing through the trommel is handled by a series of 32 Pan American rougher-jigs powered by Westinghouse motors. These shake the material, settling the heavier, gold-bearing material to the bottom where it is drawn off into a concentrate sump. The lighter and non-gold bearing material from the jig goes to the stacker, thence to the gravel pile.

From the concentrate sump, the rougher concentrate goes through another shaking process, after which the final concentrate goes to the amalgamator. In the amalgamator, mercury is introduced and combines with the gold to form an amalgam. This amalgam is taken periodically to retorts on the shore where it is heated; the mercury passes off as vapor, is condensed and used again. The gold remaining in the retort is shipped under guard to the U. S. Mint in San Francisco.

Since some gold may be left in the material rejected by the amalgamator, this material goes through a secondary recovery process during which it is crushed in a ball mill, and ends up again in the retorts where the gold is extracted and the mercury used is recovered.

Unlike many placer operations, particularly in river beds where tall piles of tailings are left along the banks, the Dayton Dredge will leave a fairly even terrain. In filling up the pond behind it, the stacker will deposit its tailings so that they will tend to level off in the water.

Excavating 100 Feet Under Water

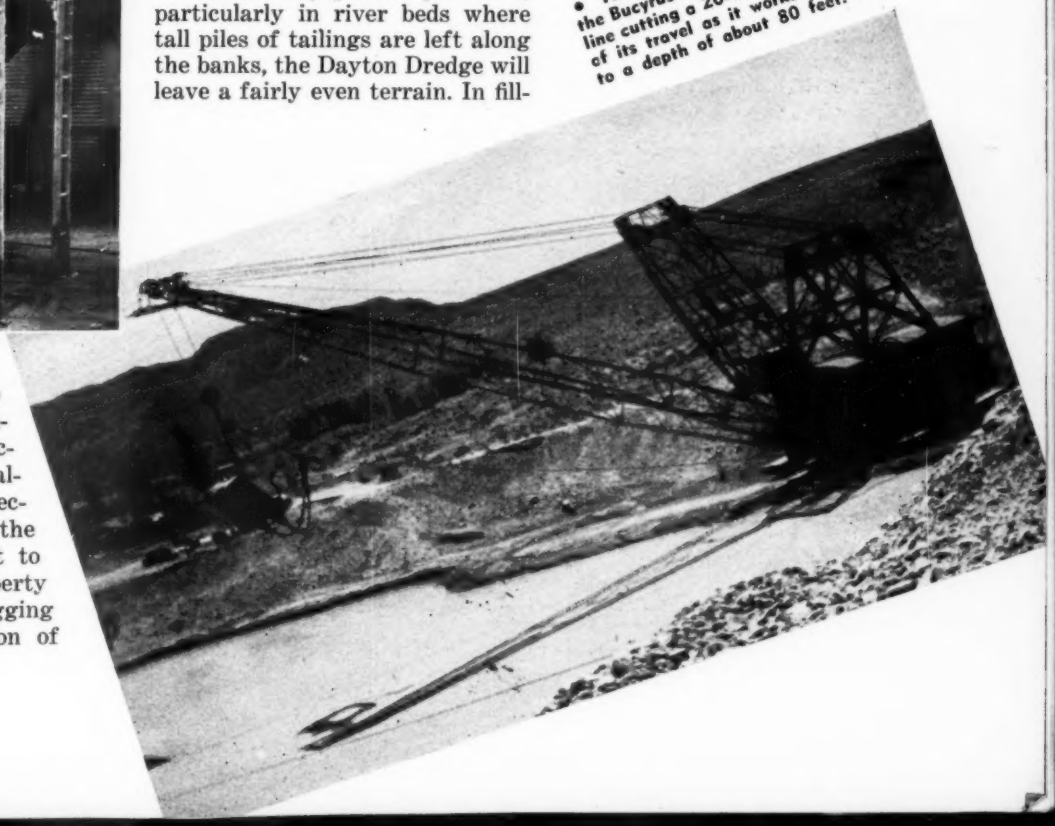
Eventually the dragline will be working at depths to 100 feet, which is something of a record for underwater work. Even in this wet digging, which slows up since the bucket cannot be cast but drops straight from the boom, the dragline will be able to keep pace with the washer.

For the next three years the big Bucyrus - Monighan, handled by only two men, operator and oiler, is expected to be engaged in this heavy work 24 hours a day, seven days a week. Operators for the three regular shifts are T. C. Tout, George Miller, and Roger Kenyon with Job Superintendent Dan Avery taking over the relief shift. Standard Oil lubricants have been specified for use on all equipment.

A. Leschen & Sons' wire rope has been used throughout on the dragline, as follows: two-part hoist rope, 1⅜"; drag rope, 2½"; and boom hoist rope, 1¼". Rope

(*Continued on page 542*)

• This recent photograph shows the Bucyrus-Monighan 15-W dragline cutting a 20-foot bench ahead of its travel as it works the pond to a depth of about 80 feet.



SIX MONTH CITY

John W. Cowper Company, Inc., of Buffalo and Senior & Palmer, Inc., of New York City combine forces to build housing facilities for 15,000 men in six months at the Fourth Armored Division's Pine Camp headquarters

By SPENCER JONES

ON OCTOBER 17, 1940, Secretary of War Stimson announced that a contract had been awarded on a cost plus basis for the construction of essential housing and utilities for 15,000 men at Pine Camp, New York, for 30 years a camp of the New York National Guard and a concentration point of the U. S. Army for maneuvers in summer. The contract was awarded jointly to The John W. Cowper Company, Inc. and Senior & Palmer, Inc., whose head offices are at Buffalo, New York, and New York City, respectively.

The Cowper organization assumed responsibility for housing construction and Senior & Palmer for the installation of utilities on this urgent defense project, the total cost of which is expected to exceed $20,000,000. Immediately after the contract was awarded, work was started on the 16,312 acres of the original reservation, with the completion date set at July 1, 1941. Wm. S. Lozier, Inc., Rochester, New York, were the architects and engineers for the War Department on this project.

Nearly 800 structures were included in the contract; 240 of them insulated barracks (for Pine Camp has sub-zero winter weather). The balance consisted of two theaters; a church; a laundry; a bakery; various headquarters buildings; 81 mess halls; a 540-bed hospital; 116 warehouses; a cold storage plant; numerous fire stations; airplane hangars; and structures to house, maintain and service 2,500 tanks; scout cars, mortar carriers, trucks, personnel carriers (passenger cars, commonly called "jeeps") motorcycles, trailers, ambulances and wreckers.

Complete Utilities Created

Utilities included 33.89 miles of bituminous macadam and concrete roads; 28.33 miles of sewers; 33.19 miles of water mains; 13.5 miles of railroad trackage involving 150,000 cubic yards of grading; a sewage disposal plant designed to handle 4,000,000 gallons daily; 32 miles of electric distribution lines; 13 miles of copper

• General view portion of the ba area at Pine C during early cons tion operations. buildings in va stages of "ass line" construct

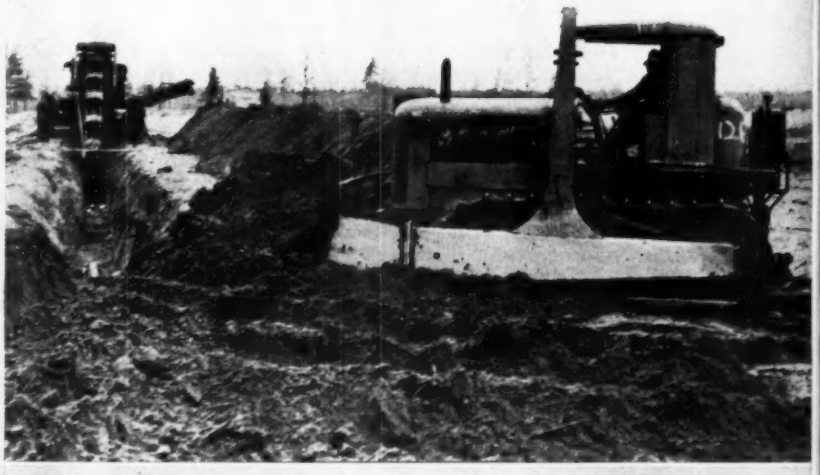
• Top: A Bucyrus-Erie 1-yard dragshovel handles some wet excavation work as it digs a temporary emergency sewage treatment basin for the camp. Center: Dirt from a water supply line trench excavated by the trencher in the background is backfilled by an Allis-Chalmers tractor equipped with a Baker bulldozer. Bottom: A large sewer trench receives the excavating attentions of a Lorain dragline.

housed service lines; two 500,000 gallon elevated water tanks with bottom capacity lines 100 feet or more above ground surface level; 1,000,000 cubic yards of general area grading; one square mile of flying field with asphalt runways 5,000 feet long by 300 feet wide (flying field construction was supervised by Col. George R. Goethals, the son of Gen. George W. Goethals of Panama Canal fame); an electrical substation; and 10 or 12 drilled water wells, each with an electric pump controlled from a central station.

Electrical distribution lines were sublet to Day & Zimmerman, Philadelphia, Pennsylvania, while more than a million dollars worth of well drilling, electrical pump work, plumbing, heating and inside wiring was let to local (Watertown, New York) and other contractors. The water wells were of the gravel packed type, with 3-foot seamless steel casing and slotted bronze screens. This subcontract, let to Layne-New York Company, called for the production of 3,000,000 gallons of water daily. Each well (there will probably be 12 eventually) is about 150 feet deep and each is equipped with a Layne electric drive turbine pump of 100 gpm to 400 gpm capacity, depending on the flow of the well.

The major portion of the work was necessarily done during the winter, and winter is no joke in this area, with temperatures down as low as 20° below zero and plenty of snow. Although geologically the cantonment area is sandy, with considerable sandy loam, some boulder-filled glacial deposits and a few outcrops of limestone ledge rock, the low temperatures solidified even the loosest materials and made digging difficult.

A 3.5 mile railroad spur from the main line of the Watertown-Massena Railroad to Pine Camp



• Completed barracks, sewage facilities and graded grounds are ready for army use as a line of armored scout cars roll in to begin maneuvers.

was graded with Gar Wood and LeTourneau 12-yard scrapers pulled by HD-14 Allis-Chalmers and D-8 Caterpillar tractors, assisted by 10-yard and 6-yard Continental scrapers pulled by LLO and PB-100-5 Allis-Chalmers tractors. Bulldozing was done by almost every known make of bulldozer, from Bucyrus-Erie to La-Plant-Choate, and pushed around by as many different makes of tractors. Shallow cuts and fills were the rule and only one short cut was through rock, a soft limestone, but the deeply frozen sand and loam made all the digging of a rock-like nature. It wasn't, in fact, until April 15 that the last of the frost left the ground, by which time the 150,000 cubic yards of railroad grading was finished; the 105-lb. rails were laid; and the 12-inch depth of cinder ballasting practically completed.

Much of the equipment used for railroad grading was leased by the contractors, as, indeed, was much of the other equipment, such as shovels, cranes, draglines, etc. So varied were the duties and so frequent the changes of location of equipment that keeping accurate track of them would be as difficult as recording the movements of a squadron of airplanes during an aerial combat.

General Grading Operations

The 1,000,000 cubic yards of general area grading were scooped, scraped, hauled, dumped, spread, and rolled by a fleet of 5 power shovels, 16 tractor-drawn 4-wheel scrapers, 2 large capacity 2-wheeled scrapers, 35 bulldozers, 10 Bullgraders, 60 dump trucks, 4 motorgraders and 19 rollers. When the ground was frozen too hard for the scrapers, the shovels were assisted by various units of a fleet of six draglines.

Water main trenches and sewer trenches represented an additional 350,000 cubic yards of excavation. Water lines had to have a minimum of 6 feet of cover and sewers a minimum of 10 feet, the cast iron water lines varying from 6 inches to 16 inches, and the sewer lines (vitrified tile) 8 inches to 18 inches and (reinforced concrete) 20 inches to 30 inches. Trench excavation was done with a fleet of 12 dragshovels, 2 cranes with clamshell buckets, and the 6 draglines, with several trenchers cutting the narrower trenches. Backfilling was done with the bulldozers and Bullgraders except in the case of some of the extra wide and deep excavations where the clamshells and draglines which had dug them did their own backfilling. Heavy pipe was laid with the piece of equipment which was handiest at the moment.

Grading for the 10 miles of railroad trackage inside the camp, and the 33.89 miles of highways, was a matter of some 460,000 cubic yards, done with the equipment previously mentioned. Foundation excavation, amounting to more than 50,000 cubic yards, was handled largely with clamshell cranes, of which there were 8 on the job, and several of the dragshovels.

Paving of the bituminous macadam roads and the flying field runways and aprons, deferred until the summer of 1941, was not yet under way when the job was visited. These roads are 20 feet to 50 feet wide and rest on a 12-inch rock sub-base. The 88,000 square yards of reinforced concrete highway, 24 feet wide and from 7 inches to 9 inches thick, was also not yet under way in

• Tractor-drawn scrapers handled a good share of the 1,000,000 yards of general area grading at Camp Sand. Here a Caterpillar-LeTourneau unit picks up a load on a high spot.

April when the job was visited.

The reinforced concrete tanks and Dorr settling equipment for the permanent sewage disposal plant not being quite ready for operation when the first cadre of soldiers arrived at the cantonment, work was rushed on a temporary sewage treatment plant. Here at the foot of a steep hill on the north bank of Black River a 29-B Bucyrus-Erie dragshovel, diesel-powered, and with a 1-yard dipper, was digging furiously, deepening a treatment basin full of muddy water, while on the opposite side of the basin a 342 Marion backhoe, also diesel-powered and also with a 1-yard dipper, was giving a like performance.

Low temperatures, heavy snow and the difficulties involved in servicing and maintaining widely scattered and frequently shifted equipment were the chief problems of the utilities construction group. Four Model 12 Caterpillar motorgraders, diesel powered, were kept busy during the winter as snow plows and frequently several of the bulldozers and Bullgraders were also detailed to this duty. Every piece of equipment that could be provided with housing for the operator was so equipped, but even at that there were many cases of frostbite. A fleet of service trucks was constantly on the move over the entire area, supplying fuel, lubricants and assistance on minor emergency repairs. In addition, a large repair shop for equipment was maintained at a central point.

"Around the Clock" Activity

Whenever it was humanly possible the job was operated in three 8-hour shifts until it was certain that housing and utilities could be sufficiently completed to accommodate the soldiers as they were scheduled to arrive. Long shifts at overtime pay were available to all men who were willing and physically able to hang on. Here was one rush job where everyone from top to bottom of the salary and responsibility scale seemed to have done and to be doing better than average work and plenty of it. At the time the job was visited, more than 5,000,000 man-hours of work

(Continued on page 542)

EXCAVATING AND ALLIED EQUIPMENT LEASED OR OWNED BY THE PINE CAMP CONTRACTORS

Shovel Equipment

Make	Type	Model No.	Power	Capacity	Used for
Link-Belt Speeder	Backhoe	LS-80	Diesel	½-yd.	Trench. & Grad., etc.
Link-Belt Speeder	Backhoe	LS-80	Gas	¾-yd.	Trench. & Grad., etc.
Link-Belt Speeder	Backhoe	——	Diesel	½-yd.	Trench. & Grad., etc.
Buckeye	Backhoe	K-393	Gas	——	Trench. & Grad., etc.
Link-Belt Speeder	Backhoe	——	Gas	¾-yd.	Trench. & Grad., etc.
Northwest	Pullshovel	25	Gas	¾-yd.	Trench. & Grad., etc.
Northwest	Backhoe	6	Gas	1½-yd.	Trench. & Grad., etc.
Masillon	Shovel	35	Gas	1-yd.	Trench. & Grad., etc.
Lorain	Backhoe	75-B	Diesel	1¼-yd.	Trench. & Grad., etc.
Lorain	Shovel	75-A	Gas	1¼-yd.	Trench. & Grad., etc.
Lorain	Backhoe	75-B	Diesel	1-yd.	Trench. & Grad., etc.
Lorain	Shovel	75-A	Gas	1¼-yd.	Trench. & Grad., etc.
Marion	Backhoe	342	Diesel	1-yd.	Trench. & Grad., etc.
Koehring	Backhoe	401	Gas	1-yd.	Trench. & Grad., etc.
Bucyrus-Erie	Dragshovel	29-B	Diesel	1-yd.	Trench. & Grad., etc.
Bucyrus-Erie	Shovel	37-B	Diesel	1½-yd.	Trench. & Grad., etc.
Bucyrus-Erie	Shovel	20-B	Diesel	¾-yd.	Trench. & Grad., etc.
P & H	Crane Clamshell 65' Boom	600	Gas	¾-yd.	Found. Excvtn. & Bldg. Erect'n.
Moore Speedcrane	Crane Clamshell 65' Boom	——	Gas	1-yd.	Trench. & Grad., etc. Found. Excvtn.
Moore Speedcrane	Crane Clamshell 60' Boom	——	Gas	1-yd.	Bldg. Erectn. and Sewers Found. Excvtn.
Bucyrus-Erie	Crane Clamshell 40' Boom	1030	Gas	¾-yd.	Bldg. Erectn. Sewers & Roads
Link-Belt Speeder	Crane Clamshell	LS-60	Diesel	½-yd.	General
Bay City	Crane	45	Gas	¾-yd.	General
P & H Truckcrane	Crane	203A	Gas	——	General Hoisting
Link-Belt Speeder	Crane	——	Gas	½-yd.	General Hoisting
Link-Belt Speeder	Dragline	25	Gas	1-yd.	Trench. & Grad., etc.
Bucyrus-Erie	Dragline	34-B	Gas	1-yd.	Trench. & Grad., etc.
Lorain	Dragline	75-B	Gas	1½-yd.	Trench. & Grad., etc.
Northwest	Dragline	5	——	1¼-yd.	Trench. & Grad., etc.
Link-Belt Speeder	Dragline	——	Gas	1-yd.	Trench. & Grad., etc.
Bay City	Dragline	45	Gas	¾-yd.	Trench. & Grad., etc.

Tractors and Tractor Tools

TRACTOR			TRACTOR TOOLS				
Quantity	Make	Model	Quantity	Make	Type	Model	Capacity
4	Allis-Chalmers	HD-14	4	Gar Wood	Scrapers	400	12-yd.
1	Allis-Chalmers	LLO	1	Continental	Scraper	CS-10-A	10-yd.
1	Allis-Chalmers	PB-100-5	1	Continental	Scraper	CS-5-B	6-yd.
1	Caterpillar	D-8	1	LaPlant-Choate	Angledozer		
6	Caterpillars	D-8	6	LeTourneau	Angledozers	U-12	12-yd.
3	Caterpillars	D-8	3	LaPlant-Choate	Bulldozers	——	
4	Caterpillars	D-8	4	LeTourneau	Angledozers	——	
3	Caterpillars	D-8	3	LeTourneau	Scrapers		12-yd.
1	Caterpillar	D-8	1	LeTourneau	Scraper		16-yd.
2	LeTourneau	Model C		Tournapulls			
1	Caterpillar	D-8	1	Austin-Western	Scraper		12-yd.
2	Allis-Chalmers	HD-14	2	Gar Wood	Scrapers	L-15	
6	Allis-Chalmers	HD-10	6	Baker	Bulldozers		
6	Caterpillar	D-4	6	LaPlant-Choate	Bulldozers		
4	Caterpillar	RD-6	4	LaPlant-Choate	Bulldozers		
4	Caterpillar	D-7	4	LaPlant-Choate	Bulldozers		
3	Caterpillar	35	3	LaPlant-Choate	Bulldozers		
2	International	TD-40	2	Bucyrus-Erie	Bulldozers		
1	Allis-Chalmers	HD-7	1	Baker	Bulldozer		
1	Allis-Chalmers	SO	1	Gar Wood	Bulldozer		
1	Caterpillar	D-6	1	LaPlant-Choate	Angledozer		
1	International	TD-40	1	Bucyrus-Erie	Bullgrader		
1	Caterpillar	D-7	1	LeTourneau	Bulldozer		
1	International	TD-18	1	Gar Wood	Bulldozer		
1	Allis-Chalmers	L-90	1	Gar Wood	Bulldozer		
1	Caterpillar	D-8 (spare tract.)					
4	Caterpillar	12		Motorgraders (also used for snowplows)			

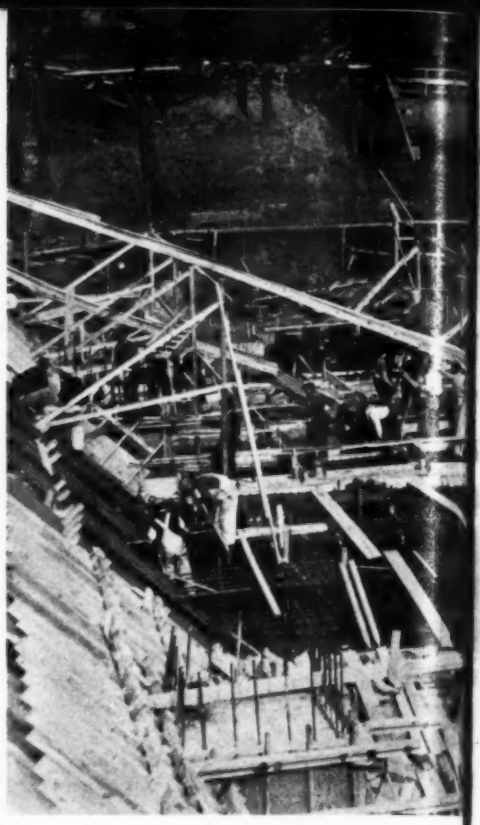
1	Buffalo-Springfield 14-ton Roller	60	Dump Trucks
1	Buffalo-Springfield 12-ton Roller	228	Service, Utility, tank pick-up trucks
13	Buffalo-Springfield 10-ton Rollers	50	Passenger cars, station wagons
1	Buffalo-Springfield 3-ton Roller (tandem)		
1	Acme 12-ton Roller		
1	Acme 10-ton Roller		
1	Hercules 10-ton Roller		

MORE POWER FOR ST. LOUIS

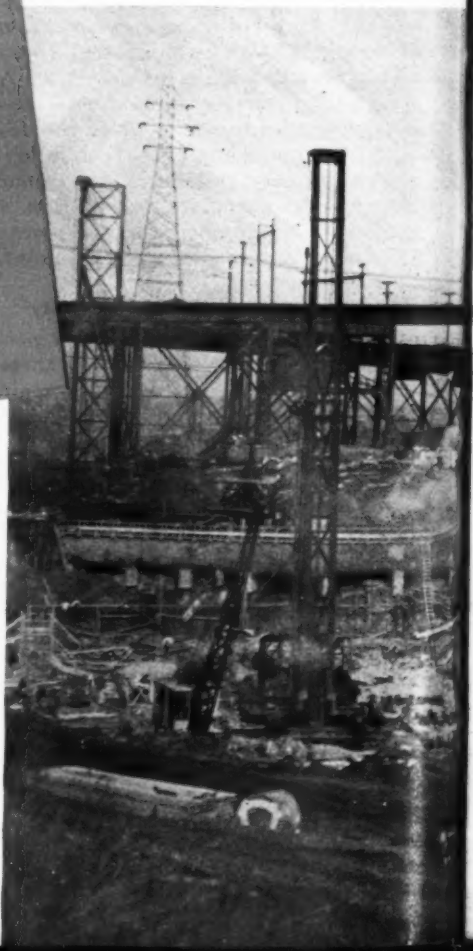
JULY 10, 1940, work began on the construction of Venice No. 2 Plant of the Union Electric Company of Illinois at Venice on the east bank of the Mississippi River. An existing plant on this site has an installed capacity of 62,500 KW; present plans for the new plant call for installation of two sections, each having a capacity of 80,000 KW, with space for future additions to make the ultimate capacity 400,000 KW. Stone & Webster Engineering Corporation is in charge of design and supervision of construction of the entire project. Fruin-Colnon sub-contracted for handling excavation and sub-structure concrete; Western Foundation Company handled pile driving; Gamble Construction Company built a section of the wall and miscellaneous structures. The first section will be finished and the new plant furnishing power about the 1st of December, 1941.

The most unusual feature of this power house is the necessity to "anchor" it down, to protect it from Ole Man River. Since the bottom of the new building is about six feet below normal river level, high water (46 feet in 1844) would "float" the building away. Ingenious construction eliminates that possibility. First a reinforced concrete levee wall (which is also one wall of the plant) backs up the levee. Second, the ingenious "key" system shown in the accompanying sketch provides an integral system of waterproofing for the bottom mat. Skin friction on the piling is figured to counteract the "floating" force. The number of piles required was determined by the surface area needed to develop this friction, rather than by the number needed for bearing.

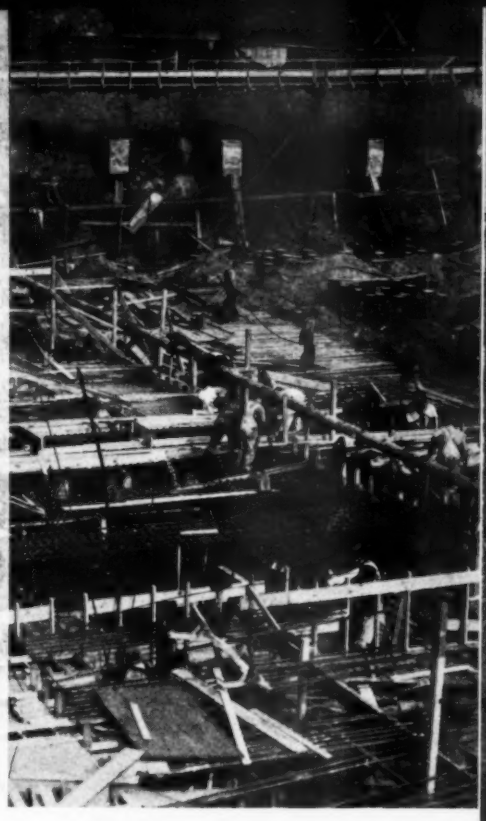
The following six pages of pictures feature the interesting methods and equipment used in the construction of St. Louis' newest power plant.



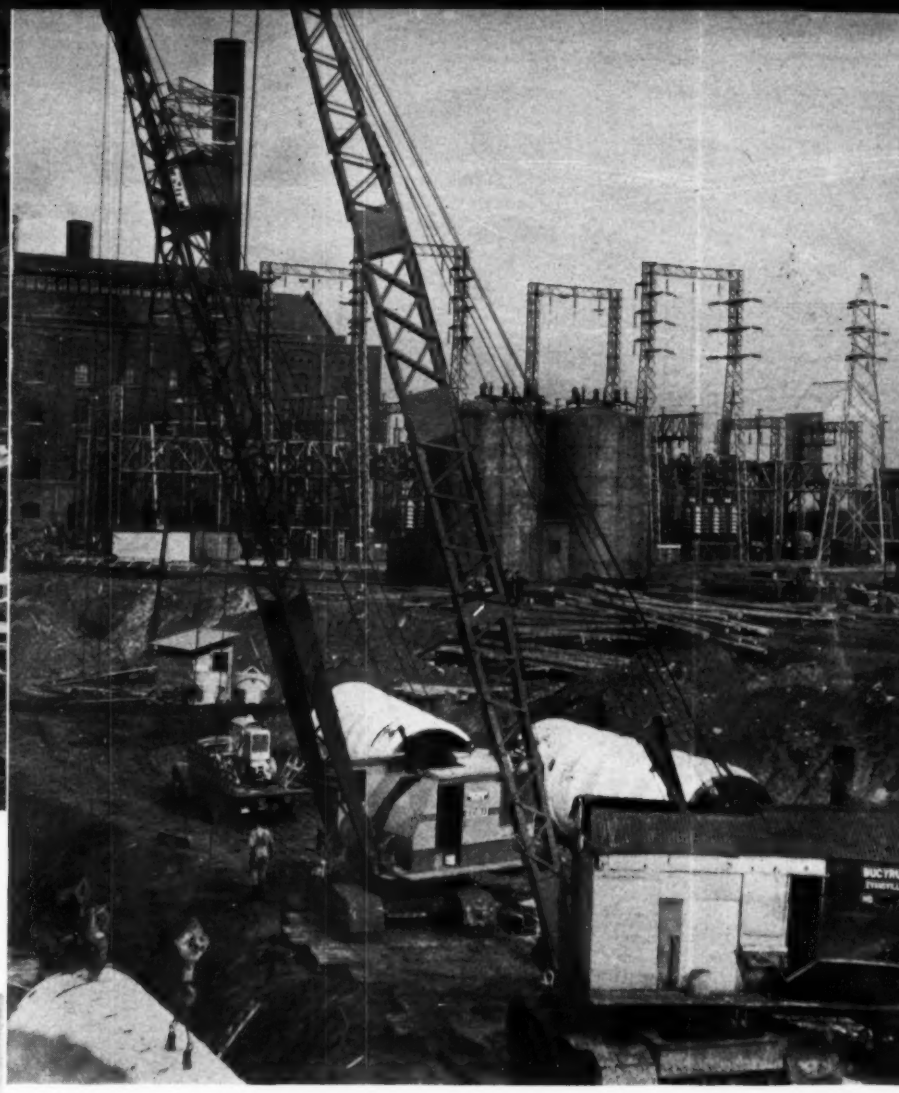
• Below: Two steam-operated pile drivers, working on the Western Foundation Company contract, put down piles that will counteract the "floating force" of possible Mississippi River floods.



• Left: A completely equipped field hospital capable of rendering emergency treatment for any type of accident is one of the job's safeguards.

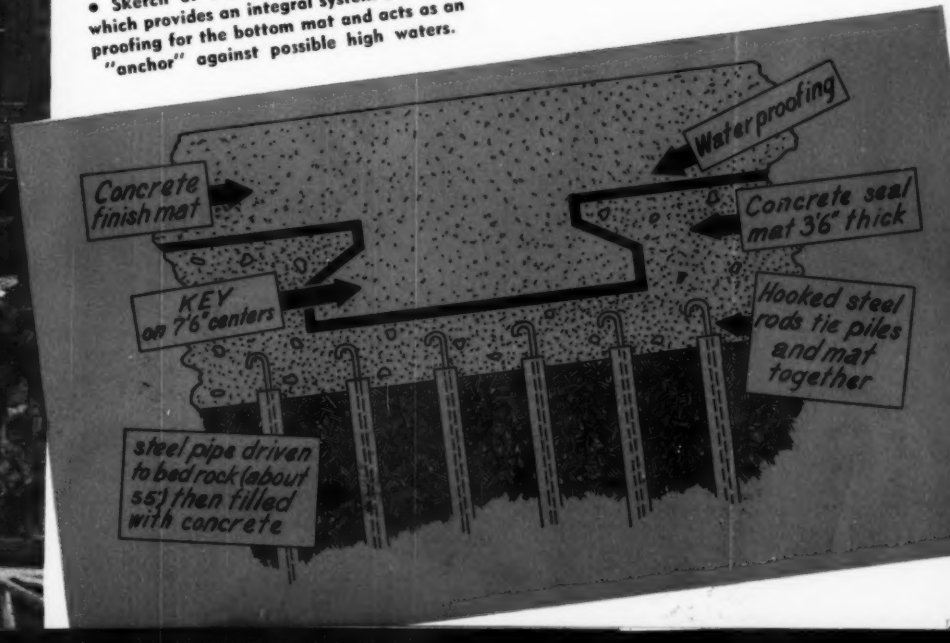


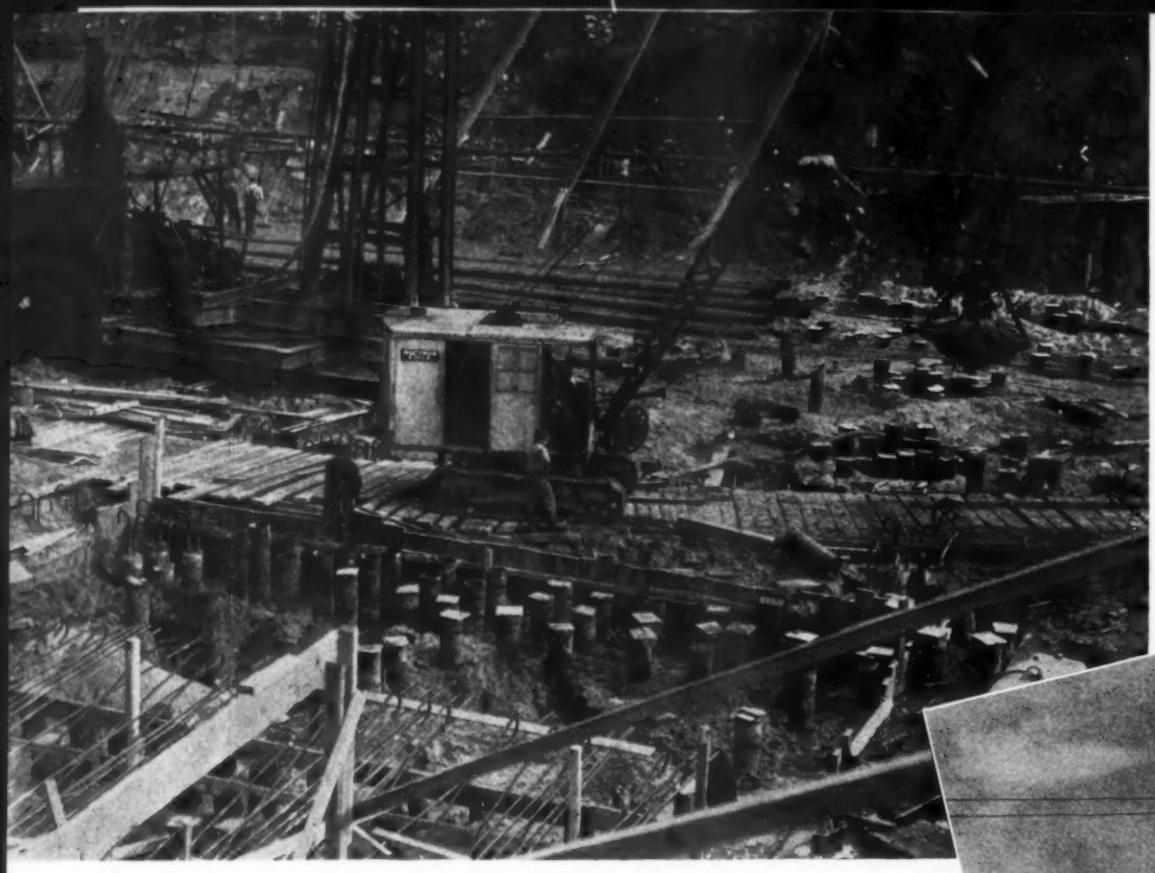
• Above: Chutes drop concrete to any desired section. Note reinforcing steel. Substructures required about 20,000 yards of concrete. General Materials Company furnished mixed concrete to Fruin-Colnon who, in turn, furnished needed quantities to other sub-contractors.



• Over 1,000 feet of 108-inch discharge pipe with bituminous lining and T-section stiffeners on the outside was placed by these Bucyrus-Erie machines—a new 37-B and an old 50-B steamer.

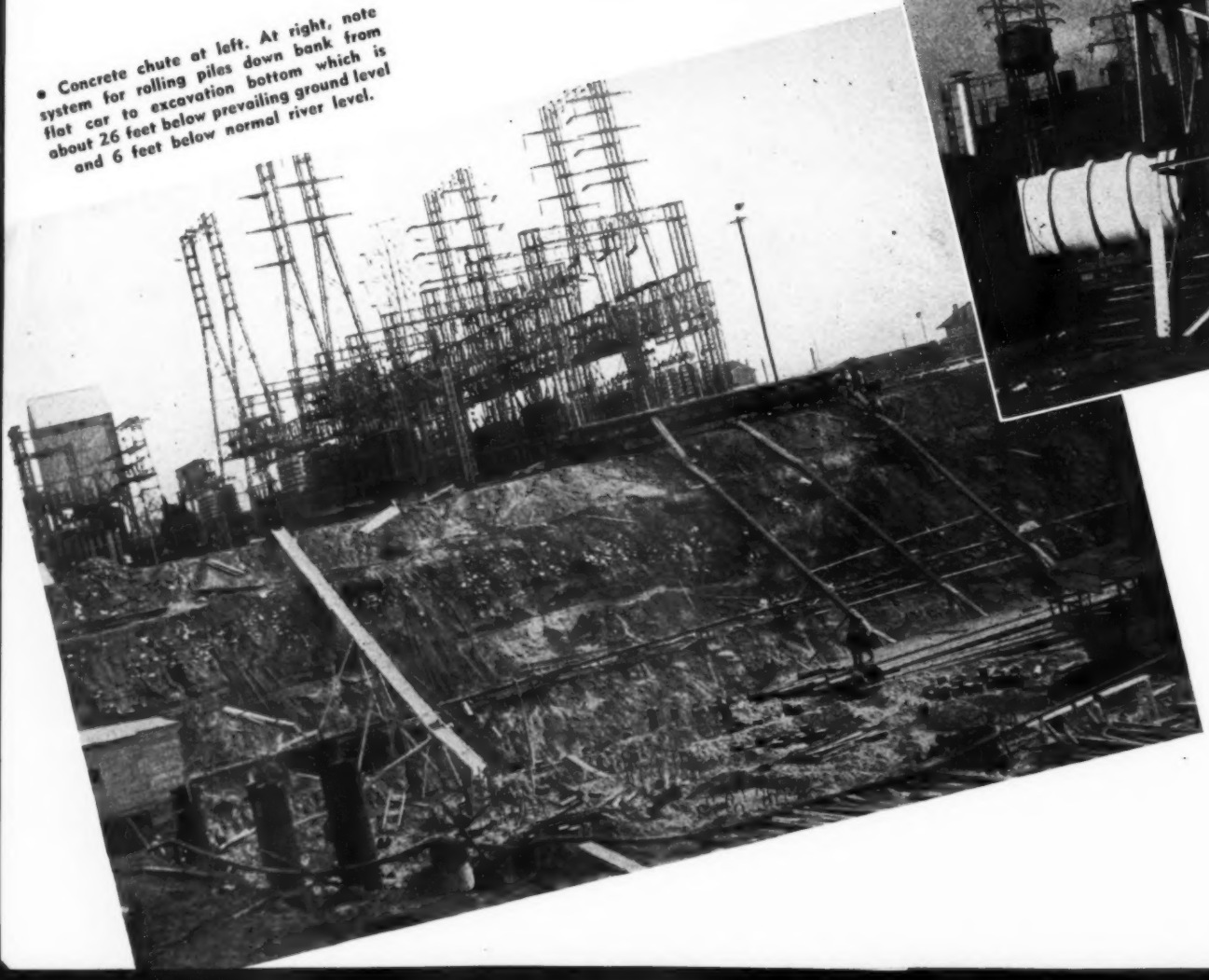
• Sketch of the ingenious "key" system which provides an integral system of waterproofing for the bottom mat and acts as an "anchor" against possible high waters.


Water proofing
Concrete finish mat
Concrete seal mat 3'6" thick
KEY on 7'6" centers
Hooked steel rods tie piles and mat together
steel pipe driven to bed rock (about 55') then filled with concrete

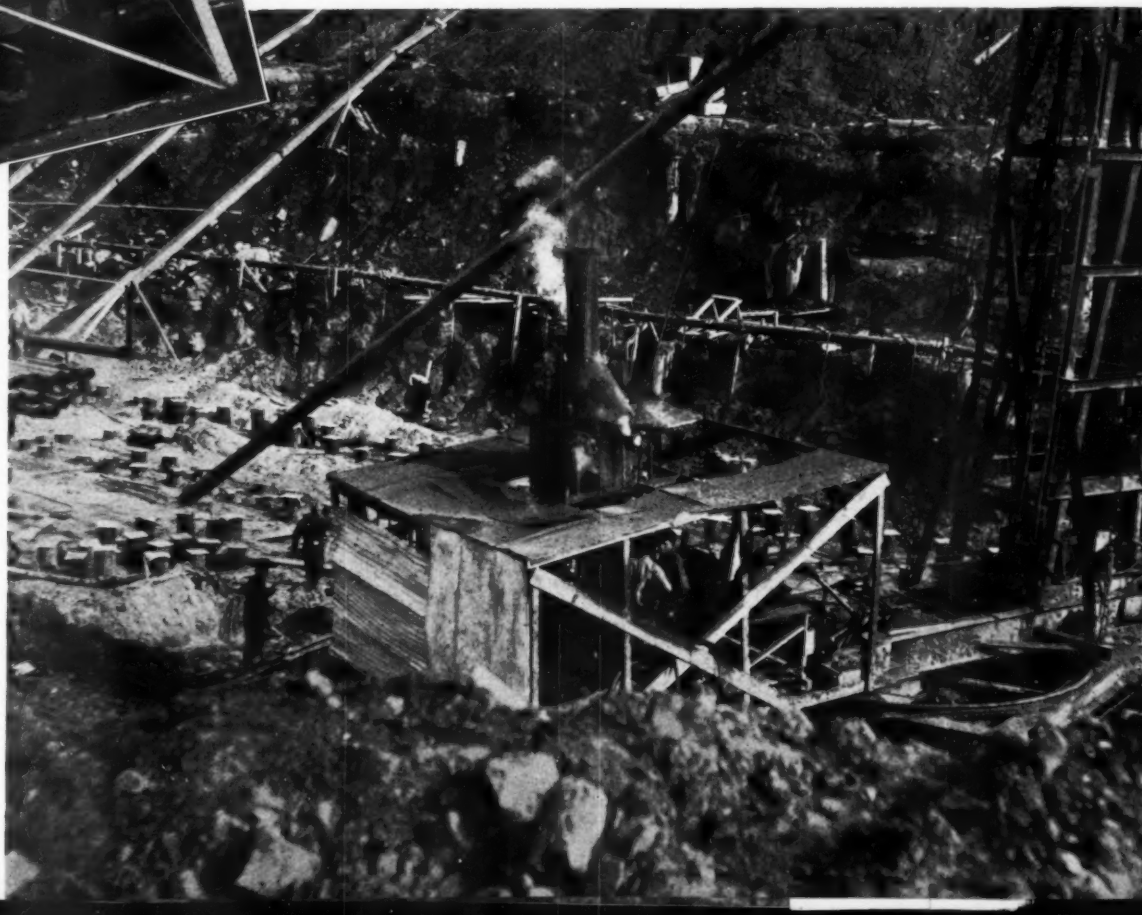


• View showing foundation pile. Note at left, steel hooks set in concrete pile. These will tie floor slabs to pile, hold building down despite "Ole Man River." The 1020 Bucyrus-Erie clamshell is excavating for a sump.

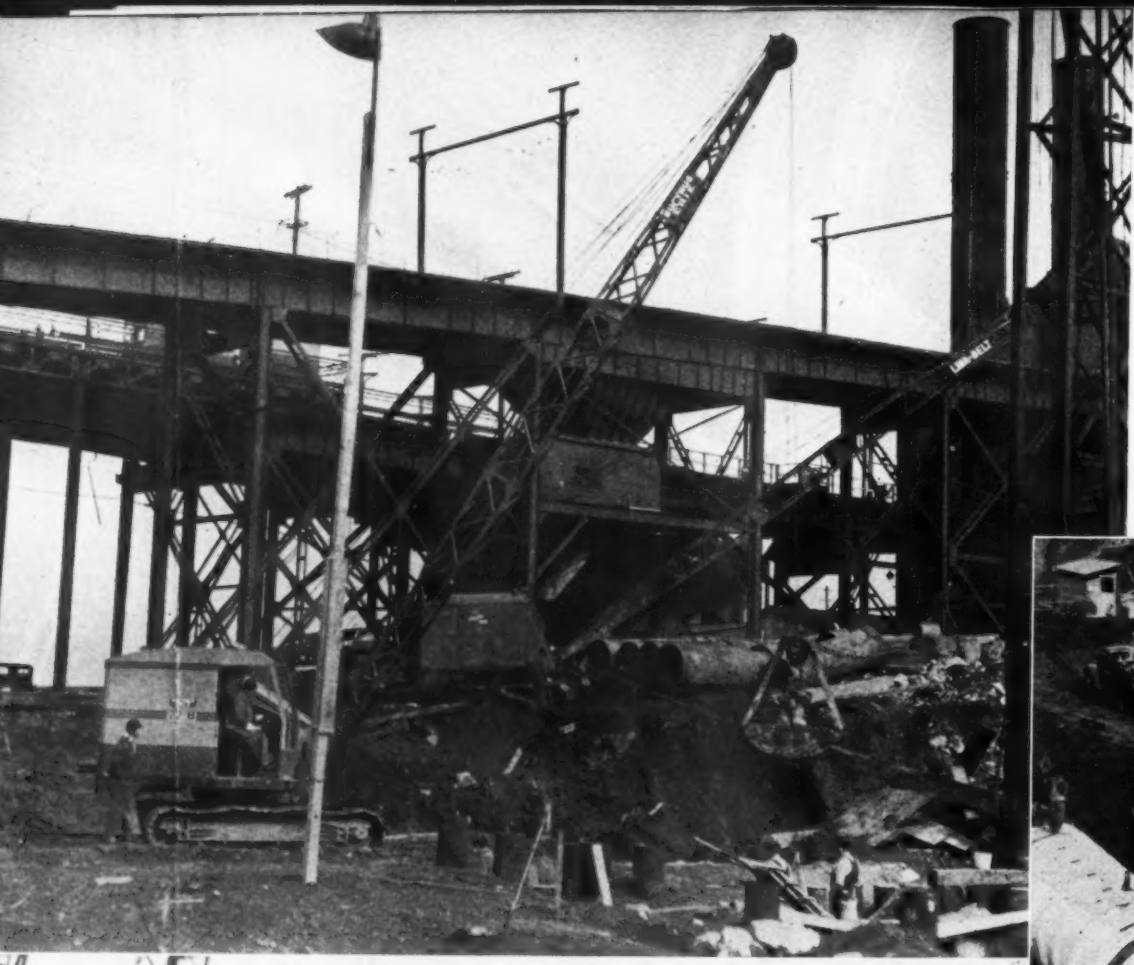
• Concrete chute at left. At right, note system for rolling piles down bank from flat car to excavation bottom which is about 26 feet below prevailing ground level and 6 feet below normal river level.



• Above: Keystone dragshovel handling trench excavation for discharge pipe. Left, Center: Keeping the men safety conscious was an important part of the job's well organized safety program.



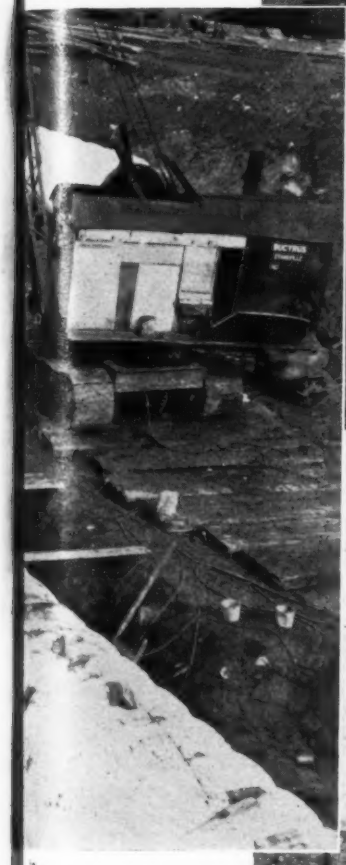
• A hollow steel pile on its way up to driving position. Once in place, piles were filled with concrete, imbedding steel hooks.



• A ¾-yard Bucyrus-Erie 22-B clamshell excavates for 48-inch discharge pipe leading from old plant to river. Pipe was later put in with Link-Belt machine shown in background.

• With excavation 6-feet below normal river level, drainage was a problem. A Moretrench wellpoint system handled the situation.

• Concrete was hauled to the chutes in 8 trucks — 4 dump bed and 4 transit mix (Blaw-Knox and Jaeger). A central concrete plant on an unused span of the nearby bridge dumped concrete to trucks, received aggregate thru hopper. Plant capacity — 50 yds. per hour.



• Above: Joints between pipe sections were electric welded. These two cranes, equipped as draglines worked on both excavating and backfilling this trench. Right: Gamble Construction Company used this Lorain 75A to handle concrete during the building of the levee wall which forms one side of the power plant.

Buy Quality for Defense

THE DOLLARS and sense value of buying equipment and supplies on a quality rather than a price basis; the economic soundness of modernizing as soon as it will save money to do so, rather than waiting until the old equipment just can't be patched up any more . . . these have always been fundamental parts of our editorial cry. It has always been true that "good tools are a worker's best investment." These hectic times have made it obvious that substituting "a country's" for "a worker's" in that statement does not lessen its truth.

As an example, we are particularly interested in the campaign one of our advertisers is beginning on page 525. With nations leaving no stone unturned to get maximum output of defense materials, the general copy theme is wound around the self-evident fact that the longer a machine lasts the fewer of these machines will have to be produced, and, ergo, the more raw materials and production hours will be released for other purposes.

In commenting upon this advertising campaign, the manufacturer sponsoring it says ". . . this is the time to realize that quality buying is patriotism industrialized. Quality merchandise made of steel invariably lasts longer and does better work, thereby conserving the steel otherwise expended in short-lived merchandise for fabrication in other essential products. Quality workmen invariably work better and with greater loyalty, thereby saving the waste of spoiled material, idle time and the treasonable loss caused by needless strikes. More than this: quality machines will yet be quality machines after the pressure of defense production has been lifted—with the quality workmen yet on the job to operate these machines. And that puts today's purchaser of quality in far better position to retain this leadership in the early tomorrow."

Our congratulations to this advertiser for a dramatic way of punching home a fundamental economic truth! Quality equipment has always been the best buy in the long run, but it takes times like these to drive that point home to many who try to cut corners in their equipment budget by using obsolete, inefficient machinery as well as purchasing cheap, "just as good" materials.

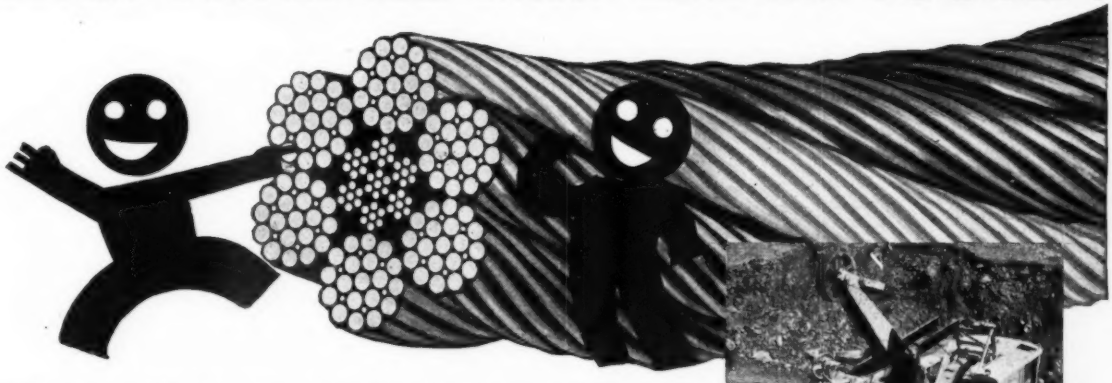
Every excavator, scraper, tractor, drill, truck, every foot of wire rope, every gallon of fuel you purchase at this time is an investment in the future. Quality equipment purchases and proper maintenance mean that the keenly competitive years ahead will find you in a position to bid contracts with the best of them.

Present National Defense needs make the purchase of quality equipment doubly important. We truly agree that "quality buying is patriotism industrialized" for it not only saves the material wasted on short-lived merchandise, but buying only the best will help you tackle your share of Uncle Sam's problems efficiently and economically.

—The Editors

2 KINDS

OF WIRE MAKE MONARCH PREFORMED EXTRA FLEXIBLE AND EXTRA TOUGH!



INNER WIRES ARE EXTREMELY FLEXIBLE. They're drawn in a special way to make them extra strong, extra pliable. They're improved plow steel too. They bend easily over your sheaves and drums. These wires are the reserve strength of Monarch Whyte Strand PREformed.

OUTER WIRES ARE EXTRA TOUGH. These wires are improved plow steel, specially drawn for outside service. They're made LARGER to provide more surface for better abrasion resistance. They are Monarch Whyte Strand PREformed's "first line of defense"... that's why we give them a TOUGH abrasion resisting skin.

And then to provide for EXTRA long life, every wire in a Monarch Whyte Strand is thoroughly covered with a special lubricant which protects unseen, inside surfaces against corrosion and friction. This better wire rope is available from stock in the correct size, grade and construction.

Your equipment may be similar to hundreds of others. Take advantage of the experiences of others having equipment like yours — ask for a Macwhyte recommendation of the rope that has proved itself to be the best for your equipment.

MACWHYTE COMPANY • 2903 Fourteenth Ave. • Kenosha, Wis. • *Manufacturers of wire rope to meet every need—left-&-right lay braided slings—Stainless Steel wire rope—Aircraft cable, Aircraft tie rods, and "Safe-Lock" Swaged Terminals.* New York Pittsburgh Chicago Ft. Worth Portland Seattle San Francisco
Distributors throughout the U. S. A.

NO. 247-C

MACWHYTE EXCAVATOR ROPES

TESTED INTERNALLY LUBRICATED PROVED

The correct ropes for your equipment

PRE-FORMED FOR BEST PERFORMANCE

For your convenience in writing to Macwhyte Company, you will find a card bound in this issue.

Equipment

you ought to KNOW ABOUT

Non-tilting mixer

Manufacturer: Chain Belt Company, 1600 West Bruce Street, Milwaukee, Wisconsin.

Claims: Has a 6″ lower shoveling height which cuts as much as five miles of shoveling in five days of work, a self-cleaning hopper with no hopper gate to jam with aggregates or cement, a sure shimmy hopper control which makes the stickiest material flow freely into the drum, die formed pressed steel drum heads with die formed pressed steel polished

drum tracks, and a Rex chain belt drive which can be found on no other mixer. Is an end discharge mixer mounted on two pneumatic tired wheels. Equipped with a 3⅓ h.p. air cooled motor and can be furnished with or without water tank.

First aid cabinet

Manufacturer: Mine Safety Appliances Company, Braddock, Thomas and Meade Streets, Pittsburgh, Pennsylvania.

Claims: Provides a complete assortment of first aid materials for the mine emergency hospital and dressing station. The materials included in this new cabinet are the complete, revised list specified in the (1940 edition) Manual of First Aid Instructions, published by the U. S. Bureau of Mines. Materials contained in the kit include triangular and compress bandages, adhesive compresses, sterile gauze, picric acid gauze, ammonia

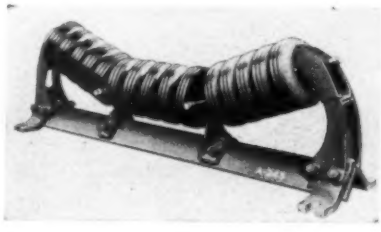
For further details about the equipment on this page please write to the manufacturer, mentioning Excavating Engineer.

ampoules and inhalants, tourniquets, paper cups, bandage-scissors, splinter forceps, splints and the Manual of First Aid Instructions. Bandages and ampoule products are put up in handy individual packages, plainly marked and easily removed. The strong steel case of the M. S. A. miner's first aid cabinet is equipped with two snap locks, brackets for hanging, and double carrying handle. The handy cabinet can be hung on the wall out of the way. The lid is equipped with chains so that, when opened, it serves as a work shelf on which to lay out dressings. The cabinet has rounded corners for safety and is finished in olive-green baked enamel.

Pneumatic roller

Manufacturer: Stephens-Adamson Mfg. Co., Aurora, Illinois.

Claims: For carriers on belt conveyors, wherever the shocks of impact are excessive. Specially designed for use under loading spouts and in belt feeders where the impact of heavy bulk loads subject both conveyor belt and carrier to abnormal strains and wear. To cushion the impact of

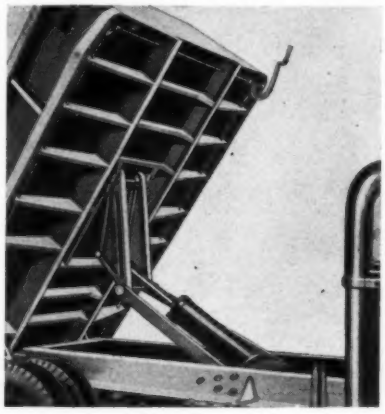


materials (and thereby prolong conveyor belt life), the rollers in these carriers are made up of a series of pneumatic rubber units, 6″ in diameter. Their advantage over a solid roller has been compared to the advantage of the pneumatic tire for trucks and automobiles over the now obsolete solid rubber tire. The rollers are mounted on the steel hub in which bearings and shaft are housed. Roller units have thick, wear-resisting treads and are inflated and permanently sealed to prevent loss of air. The assembly is built for easy servicing and quick replacement of damaged units. Identified as "Style No. 711 Pneumatic Impact Carriers."

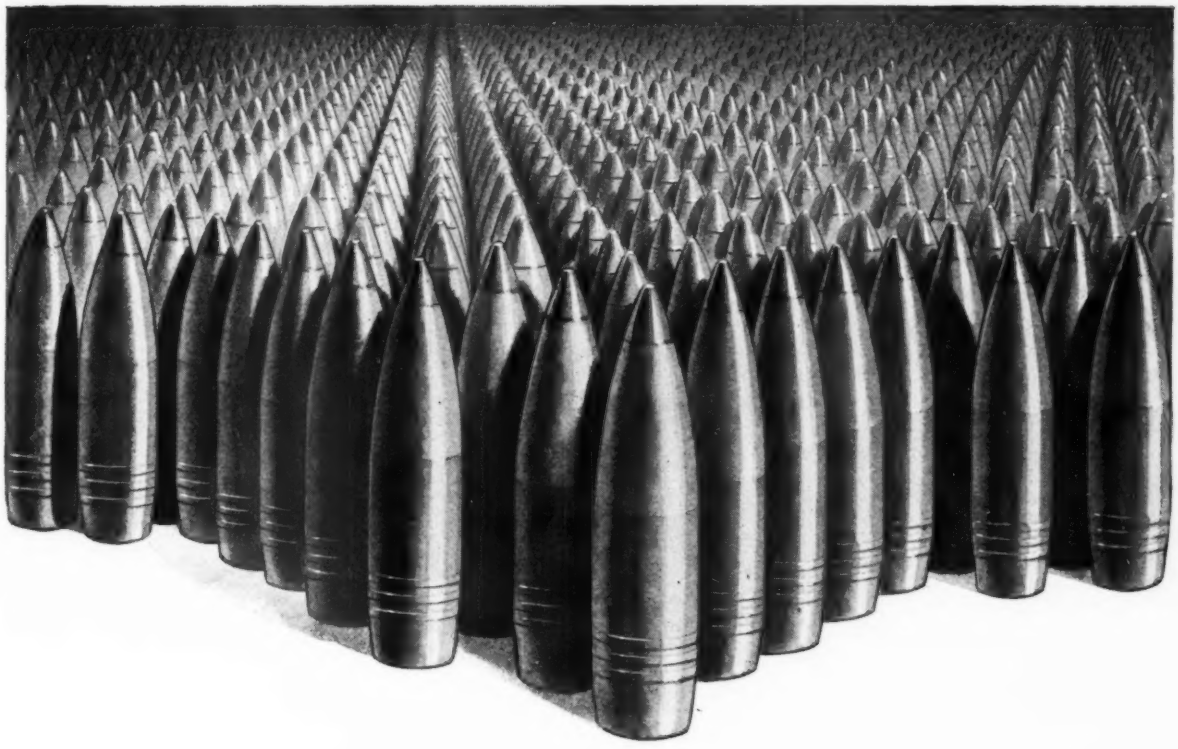
Arm-type hoist

Manufacturer: Gar Wood Industries, Inc., Hoist and Body Division, Detroit, Michigan.

Claims: Recommended for installation on 1½ to 2-ton truck



chassis and especially adaptable for use in connection with dump bodies from 8 feet to 10 feet in length. Manufactured in three sizes, D6R, D7R and D7LR. Incorporates desirable features and involves a new and exclusive type of lifting arrangement. The lifting effort is reduced considerably, due to the body being lifted further forward than with the conventional arm-type units. The lifting effort which is disseminated over a greater area, is confined within the self-contained assembly of the hoist unit. Other features are minimum stress on body and hinges; minimum stress on truck chassis frame; longer lever arm; fewer working parts; faster operation; minimum oil pressure; low mounting (when specified) and minimum weight for an armtype hoist.



1,550,000 Projectiles for National Defense from Steel Conserved by Preformed Wire Rope

★ Because preformed wire rope lasts so much longer than non-preformed, its use by American industry is saving enough steel this year to manufacture 1,550,000 high-explosive projectiles for the United States Army's 75-mm. gun.

★ Preformed saves precious time, too, by fewer and shorter shutdowns for replacements. It also reduces the possibility of delays in delivery through less frequent re-orders.

★ Furthermore it is easier and safer to handle.

★ On top of that it saves money.

PREFORMED WIRE ROPE

Ask Your Own Wire Rope Manufacturer or Supplier

Shots from the FIRING LINE

Substitute Defense Highway Bill Proposed

Introduction of a new defense highway bill to replace the $320,000,000 measure vetoed by President Roosevelt was decided upon in Washington August 8 by the House Roads Committee.

Chairman Cartwright was authorized to call the committee together for this purpose after an expected recess, with indications that the new measure would contain principal provisions of the vetoed bill.

Some members suggested at a general strategy session that the committee reintroduce immediately the identical bill that lost by a two-vote margin in the House of Representatives attempt the previous day to override the presidential veto. The house voted 251 to 128, to override the veto, falling two votes short of the required two-thirds majority. The senate had voted, 57 to 19, to override.

The proposal for immediate reintroduction of the identical bill was said to have been rejected, however, when both Democrats and Republicans agreed this might displease some of their supporters. The major complaint heard in the committee was that the president sought to retain entire control over all federal roads funds in order to ignore congressional apportionment on the basis of population.

"We lost this fight," Representative Cartwright stated, "but we will not abdicate from the principle of federal highway aid."

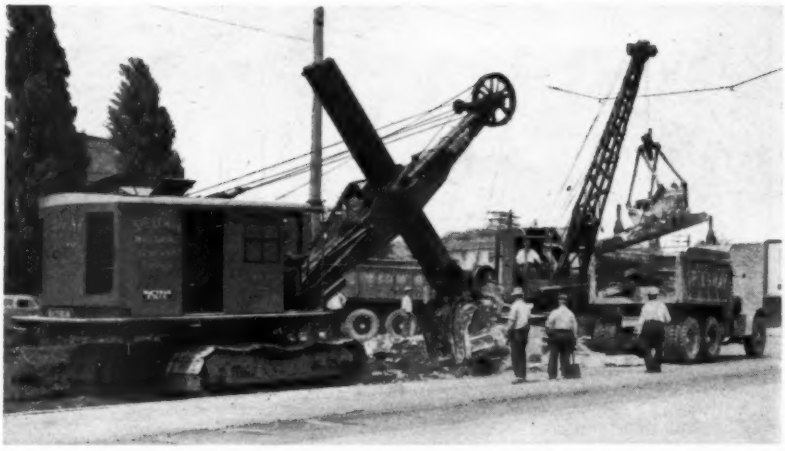
Meanwhile, the senate got a new defense highways bill on file, when Chairman McKellar of the Senate Post Office and Post Roads Committee offered a substitute measure designed to overcome the president's criticisms of the vetoed bill.

This new proposal substituted $100,000,000 for the $125,000,000 originally provided for strategic highway networks, lowered the amount for access roads from $150,000,000 to $100,000,000 and deleted entirely the original bill's $10,000,000 allocation for the construction of airplane landing strips along the highways. The bill also omitted the vetoed measure's provision allowing a maximum of $25,000,000 for emergency repairs.

Repave Access Highway To Chicago Airport

Chicago's Archer Ave. is a Northeast-Southwest boulevard which passes just north of the busy Municipal Airport, and diagonals across the city toward the Loop.

Fitting this road for the high-speed heavy-duty traffic it now carries and the even heavier traffic of the future, required re-paving a section running about two miles east from Cicero Ave. At this point Archer was composed of two 22-foot strips of unreinforced concrete flanking a double street car track. The concrete averaged about 11 to 15 inches in thickness, and the first step in "renovating" the highway was to remove it. The general contractor, John A. McGarry & Co., subbed this job, and two 1¼-yard shovels were moved in.



• Speedway Wrecking Company found that a 2-yard shovel and a ⅝-yard truck-crane were the answer to their problem of removing old pavement to prepare Archer Avenue, Chicago, for repaving as an airport access highway.

When the concrete was found too hard and heavy for straight handling, it was drilled with jackhammers on 6-foot centers to make it easier to break up and load out. At the end of two weeks something less than 1,000 feet of one of the old concrete strips had been taken out, and the subcontractor asked to be released from the job.

This left the general contractor on the spot, as the job was a high-speed one and was being pushed by the government. Finally Speedway Wrecking Company agreed to take over the concrete removal, and moved in an equipment "team" consisting of a 2-yard shovel and a truck-crane equipped with ⅝-yard clamshell bucket.

The operating method (which produced an average progress of 550 feet per single-shift day) was simple. The shovel "rooted" up a slab of concrete, sometimes as big as 22 by 15 feet, and "flipped it over on its back." The slab would usually break into several pieces as it fell. The clamshell then loaded the broken pieces into Speedway's big trucks.

A total of 10 trucks were used, dumping the concrete in the completed side of a quarry about six miles from the midpoint of the job.

Contractors from all over the city came to look the job over, as Speedway has a reputation for knowing more about concrete removal than practically anyone else in the game. Since J. B. Kolko's organization handled the concrete removal from Chicago's Century of Progress with a 1½-yard shovel when other contractors said it couldn't be done with equipment that size, Speedway has steadily added to its reputation for taking the toughest jobs in stride.

The remarkable progress of 550 feet per day was made on the Archer Ave. job, for example, without seriously disrupting the heavy street car and automobile traffic which uses Archer throughout the day.

Ask them how they do it and Speedway will be likely to say "Use equipment that can stand the gaff; keep it in the best of condition; don't take a job for a price too low to handle the work right."

What they do not mention, but what is obvious when you watch them work, is the skill and teamwork with which every member of the outfit handles his part of the job. There's no mistake about it; Speedway knows how to handle concrete.

Contract Let For World's Highest Earthfill Dam

Work will begin soon on the highest earthfill dam in the world.

The contract for construction of the huge dam was approved August 11, 1941, by Secretary of the Interior Harold L. Ickes. The dam will be located at the Anderson Ranch site on the South Fork of the Boise River, about 25 miles southeast of Boise, Idaho.

Planned to provide power for national defense, store water for irrigation, and provide flood control, the dam will be constructed by a combination of four contracting firms: Morrison Knudsen Co. of Boise, Idaho, and J. F. Shea

performance proved for HEAVY-DUTY —DIGGING—

Owned by Correale Construction Company, this 5-W has stripped an average of 3,360 yards of overburden per 7-hour shift from anthracite coal in Pennsylvania.

Bucyrus-Monighans have thoroughly field-proved their ability to deliver sustained performance. To see why they are called "the world's most popular dragline," you have only to investigate their record in the coal fields, on Mississippi levee work, on the All-American Canal, on big power projects the country over. Bucyrus-Monighans that have handled millions of yards apiece are still digging and walking with real efficiency. These outstanding draglines carry booms up to 215 feet, buckets up to 14 yards.

BUCYRUS MONIGHAN

Sold by

Bucyrus·Erie

SOUTH MILWAUKEE, WISCONSIN

For your convenience in writing to Bucyrus-Erie Co., you will find a card bound in this issue.

Co., Ford J. Twaits Co., and Winston Brothers Co., all of Los Angeles.

These combined companies submitted a low bid of $9,986,203, the lowest of three bids offered the Bureau of Reclamation.

The contract also includes construction of a hydroelectric power plant with a capacity of 30,000 kilowatts. The plant is expected to help meet the threatening shortage of power in the Idaho-Utah region.

The dam and power plant are to be completed within 1,670 days after notice to proceed has been given the firms. If the contract is completed on schedule, the power plant should be in operation in late 1945 or early 1946.

The new structure will not only be the highest earthfill dam but also the fifth highest of any type, including concrete, in the world.

Nearly 10,000,000 cubic yards of clay, sand and gravel will be moistened, rolled and compacted until the embankment reaches 444 feet above the lowest point in the cutoff trench.

Anderson Ranch Dam will be approximately 2,900 feet, or more than half a mile thick at the base. It will be about 1,350 feet long at the crest. A portion of the upstream slope will be covered with a 3-foot layer of rock riprap, and the downstream slope will have a cobble and rock fill founded on a gravel filter blanket.

The power plant will contain two main generating units of 15,000 kilowatts each, and station or "house" service generating equipment. It will be located at the downstream toe of the dam on the left bank of the river. The powerhouse will be of reinforced concrete.

A spillway at the left abutment of the dam embankment will consist of a concrete-lined open channel about 1,100 feet long, and discharge through the spillway will be controlled by two steel radial gates 25 by 22 feet in size.

Wallace Brooks

Ill of influenza for several days, Wallace Brooks, 40, president of Brooks Equipment and Manufacturing Company, Knoxville, Tennessee, was found dead in bed at his home in Knoxville on the morning of July 21. It is believed he died in his sleep of a heart attack.

A native of Jefferson County, Tennessee, Mr. Brooks came to Knoxville when he was 10 years old. After finishing in Knoxville High School he entered the U. S. Naval Academy. When he finished his studies there he returned to this city to be associated with his brother, E. N. Brooks, in the operation of the Day Pulverizing Company. This company later was merged with another company and from the merger the Brooks Equipment and Manufacturing Company was formed. Mr. Brooks had been president of the company since 1938.

Surviving are his widow, Mrs. Sigrid Borjesson Brooks; his mother, Mrs. J. T. Brooks, Knoxville; three sisters, Mrs. L. L. Elmore, Elizabethton, Mrs. H. H. Houston, New York City, and Mrs. John Kirby, Knoxville; two brothers, E. N. Brooks, Knoxville, partner in Brooks Equipment and Manufacturing Company, and Major Paul R. Brooks, of U. S. Army, Knoxville, now stationed at Camp Jackson, South Carolina.

Morris Leon Ellis

News of the sudden death of Morris Leon Ellis, prominent South Carolina contractor comes as a distinct shock to his many friends throughout the industry.

Mr. Ellis' accidental death occurred on July 14 while taking a midnight dip from the beach near his summer cottage at Cherry Grove, South Carolina, where he had been enjoying the weekend with his wife and two daughters. His body was found on the beach by his family who went out to look for him after he failed to return.

Born in Durham, South Carolina, Mr. Ellis eventually moved to Greensboro where he had resided for 20 years. His numerous activities as the head of the Leon Ellis Construction Company and partner in the contracting firm of Cline & Ellis made him a widely known figure in the contracting industry in which he enjoyed a fine reputation for fair dealing.

Currently Mr. Ellis had been engaged on construction contracts for the government at Fort Bragg, several Tennessee State Highway jobs, sewer and water works construction for the City of Greensboro as well as the operation of numerous asphalt plants.

A member of the Carolina Branch of the Associated Contractors of America, Mr. Ellis had long taken an active part in the organization's affairs.

John Dolese

John Dolese, president of Dolese Brothers Company, Chicago, Illinois, died recently at his home in Evanston, Illinois. Mr. Dolese headed extensive crushed stone, sand and gravel, and ready mixed concrete business interests centered in Oklahoma City, Oklahoma. Two plants were also operated in Kansas.

Turnpike Extension Plans

By Bethune Jones

Hope of carrying out the proposed extension to Philadelphia of the Pennsylvania Turnpike, now linking Harrisburg and Pittsburgh, appears dependent on the state's success in obtaining an outright federal grant approximating $25,000,000, according to the findings of a special traffic survey as recently made public by Governor Arthur H. James.

Cost of extending the 160-mile turnpike to Philadelphia, it has been estimated, would run to at least $50,000,000. In contrast with this figure, the traffic survey, made for the State Department of Highways by a New York engineering firm to determine the anticipated earnings of the Philadelphia link, estimated that earnings from the proposed extension "would indicate the revenue bonds in the amount of $26,000,000 can be safely issued."

"It would therefore appear," the report concluded, "that, inasmuch as the estimated cost of the turnpike extension is about double the amount that could be financed from revenue bonds, a grant supplementing a bond issue would be necessary as in the case of the present turnpike if this project is to be undertaken."

The Pittsburgh-Harrisburg link was financed by an outright grant of $29,250,000 from PWA, and a loan of $40,800,000 by RFC, which issued and sold bonds in that amount.

Efforts to obtain a federal grant for the Philadelphia extension have thus far been unsuccessful.

Proponents of the Philadelphia link, authorized by the 1940 special session of the state legislature, declare that it would be of vital military importance, connecting the great steel mills of Pittsburgh with the industrial center and Navy Yard in Philadelphia.

The traffic survey of the proposed

Een Modder-molen en eenige Modderschuyten.

● A dredging scene in 17th century Holland from an etching by Reinier Noons. Portraying the actual excavation of Amsterdam's harbor the etching is inscribed: "A mud mill and several mud workers."